

**U.S. Application No. 09/675,790 (Conf. No. 8873)
Reply to Office Action dated January 25, 2005**

RSW9-2000-0119-US1

REMARKS

I. Summary of the Office Action and This Reply

Claims 1-14 and 17-22 are pending in the application. The Examiner has rejected claims 1-14, 17-22 under 35 U.S.C. §102(e), asserting anticipation by U.S. Patent No. 6,453,354 to Jiang ("Jiang"). Previous rejections have been withdrawn.

Claims 1, 2-4, 7-11, 13, 14, and 17-21 are amended herein. Claims 12 and 22 are canceled herein. No new matter is added.

II. Discussion of Cited Art

U.S. Patent No. 6,453,354 to Jiang

Jiang discloses a file server system using connection-oriented protocol and sharing data sets among data mover computers. A basic network file server architecture (see Prior Art in Figure 1 of Jiang) can be used with a connection oriented protocol to enable clients to access the same read/write file through more than one data mover computer. When a data mover 21 receives from one of its clients 26 a request to access a file in a file system 24 that does not "own", the data mover 21 maintains a connection to its client 26 and also maintains a connection with the data mover 22 that "owns" the file system 24 to be accessed. The data mover 21 that does not own the file system 24 to be accessed maintains a proxy or virtual connection between its client 26 and the data mover 22 that owns the file system 24 to be accessed. Thus, a communication path passes through both data movers.

In contrast, according to Jiang, as shown in Figure 2, a data bypass path 48 is

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provided between a first data mover 41 and a second file system 44 in order to bypass the second data mover 42, and a data bypass path 49 is provided between the second data mover 42 and the first file system 43 in order to bypass the first data mover 41. Accordingly, it is possible for each of the data movers 41, 42 to access data in each of the file systems 43, 44, but if a data mover does not own the file access information for the file system to be accessed, then the data mover should ask the owner for permission to access the file system, or else a data consistency problem may arise. To prevent such data inconsistency problems, when a certain data mover (e.g. data mover 41) receives a file access request from its client (46) and does not own the file system to be accessed, the data mover (41) sends a metadata request to the data mover that owns the file system to be accessed. Column 8, lines 3-15 and 30-51.

The term metadata refers to information about the data, and the term metadata is inclusive of file access information and file attributes. The file access information includes the locks upon the files or blocks of data in the files. The file attributes include pointers to where the data is stored in a cached disk array. Column 8, lines 52-59.

In response to a metadata request, the data mover owning the file system accesses file access information and file attributes in a fashion similar to the processing of a file access request, but if the file access request is a read or write request, then the data mover owning the file does not read or write data to the file. Instead of reading or writing data, the data mover owning the file system places any required lock on the file, and returns metadata including pointers to data in the file system to be accessed. Column 8, line 60 -- column 9, line 1.

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III. Response to 102 Rejections

The Examiner has rejected claims 1-14 and 17-22 under 35 U.S.C. §102(e), asserting anticipation by Jiang. Claims 12 and 22 have been canceled.

A rejection under 35 U.S.C. § 102 is proper only if each and every element of the claim is found in a single prior art reference. MPEP § 2131.

Claims 1-11, 13, 14 and 21

The Examiner has rejected claims 1-14 under 35 U.S.C. §102(e), asserting anticipation by Jiang. Claim 12 has been canceled. On page 3 of the Action, the Examiner asserts that Jiang "implicitly teaches" certain aspects of the claimed invention. Applicants respectfully disagree. A close reading of Jiang reveals that Jiang relates to a field of art entirely different from that of the claimed invention, and particularly, does not relate to application servers, or upgrading of application computer programs on application servers, etc. as recited in claim 1, and as discussed in further detail below.

Independent claim 1 is amended herein for clarification and to incorporate limitations from canceled claim 22. No new matter is added. Amended claim 1 is directed to a "method for upgrading a computer program stored on a server computer in a distributed computing environment." Contrary to the Examiner's assertion on page 3 of the Action, Jiang provides absolutely no disclosure whatsoever of "upgrading at least one of a plurality of computer programs stored on a server computer". None of the cached disk arrays and data movers disclosed in Jiang is a "server computer."

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Further, claim 1 recites that the method includes "preventing said server computer from servicing requests for an upgrade-ready computer program." Contrary to the Examiner's assertion on page 3 of the action, Jiang provides absolutely no disclosure whatsoever of "preventing said server computer from servicing requests" or for preventing servicing of any requests "for an upgrade-ready computer program."

The Examiner states on page 3 of the Action that:

Jiang teaches a file server system that allows an owner of a file to lock and unlock metadata from clients during the read/write process until the process is complete. Once the process is complete the client can access the file/metadata. Therefore, Jiang implicitly teach [sic] preventing said application server from servicing requests for an upgrade-ready computer program while permitting said application server to service client requests for other computer programs.

Applicants respectfully disagree. First, the logic of the statements above is flawed; even if Jiang teaches a file server system allowing a file owner to lock and unlock metadata, this does not mean that Jiang teaches preventing an application server from servicing requests for an upgrade-ready computer program while permitting said application server to service client requests for other computer programs.

Further, Jiang does not provide any disclosure with respect to application servers. Jiang does not provide any disclosure with respect to upgrading of computer programs. Jiang's disclosure relating to locking of metadata involves acquiring locks to ensure that metadata is not accessible while a particular data file is being read or written. The metadata is not part of the file/computer program.

Further still, claim 1 recites "preventing said server computer from servicing requests for an upgrade-ready computer program by sending a signal to stop routing requests for only said upgrade-ready computer program to said server computer."

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Contrary to the Examiner's assertion with respect to claim 3, which included a similar recitation, the cited sections of Jiang merely describe how requests are forwarded among the data movers. There is no discussion of how requests travel in this architecture-requests arrive at a data mover and are passed off if they are for a different data set from the one managed by a given data mover. There is no teaching or suggestion of how a data mover stops forwarding requests.

Further, claim 1 recites stopping requests for "only said upgrade-ready computer program", meaning that other requests may continue, as expressly recited in amended claim 1. More specifically, amended claim 1 recites "while preventing said server computer from servicing requests for said upgrade-ready computer program, concurrently permitting said server computer to service client requests for other computer programs of said plurality of computer programs." Jiang provides absolutely no disclosure whatsoever of such functionality. There is absolutely no disclosure in Jiang of permitting a particular server computer servicing requests for certain computer programs during upgrading, while preventing the same server computer from servicing other requests for another certain program. Instead, Jiang merely discloses that one data mover that does not own a file will communicate with another data mover that does own a file and that corresponding metadata will be locked while the file is read/written from the data mover owning the file via a bypass path to the requesting client via the data mover not owning the file. See Figure 2, col. 8, line 30 - col. 9, line 15.

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Notably, these amendments to claim 1, or similar recitations, were included in various claims already pending, and thus no new search is required. See former claims 1, 3, 7, 21, 22.

Claim 1 has also been amended herein to more clearly recite the upgrading software process previously claimed in an indirect manner. Thus, no new search is required. More specifically, amended claim 1 recites "while preventing said server computer from servicing requests for said upgrade-ready computer program, upgrading said upgrade-ready computer program on said server computer." This is neither taught nor suggested by Jiang, as discussed above. Jiang provides absolutely no teaching or suggesting of any upgrading of any executable computer program.

For at least these reasons, claim 1 is patentable. Claims 2-11, 13, 14 and 21 depend from claim 1 and are likewise patentable.

Additionally, claim 2 recites "preventing said server computer from receiving any new requests for said computer program." As discussed above, Jiang neither teaches nor suggests any such preventing, or anything in relation to a server computer. Further claim 2 recites "waiting until all of said server computer's current requests for said computer program have ended; acknowledging completion of upgrading of said computer program; and permitting said server computer to receive any new requests for said computer program." By way of example, and in response to the Examiner's assertion on page 3 of the Action, col. 13, lines 42-62, have nothing to do with such waiting. This section of Jiang relates to how session forwarding occurs for CIFS, and is

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irrelevant to the claimed invention. Jiang provides absolutely no teaching or suggestion of such functionality.

Claim 3 further recites that preventing the application server from receiving new requests involves "sending a signal to a packet-switching router to instruct said packet-switching router to stop routing requests for said computer program to said server computer." The Examiner asserts that this is disclosed in Jiang. Contrary to the Examiner's assertion, the cited sections of Jiang merely describe how requests are forwarded among the data movers. There is not a router through which all requests travel in this architecture-requests arrive at a data mover and are passed off if they are for a different data set from the one managed by a given data mover. Further, there is no "sending of a signal to a packet-switching router" There is no teaching or suggestion of how a data mover stops forwarding requests. Claims 7 and 21 are patentable for similar reasons.

With respect to claim 11, Jiang is absolutely devoid of any teaching or suggestion of "maintaining a session list of active client requests serviced by said server computer, said session list identifying a client request any computer program requested by said client."

For at least these reasons, claims 1-11, 13, 14 and 21 are patentable. Therefore reconsideration and withdrawal of the rejections of claims 1-11, 13, 14 and 21 are requested respectfully.

Claims 17-20

Independent claim 17 is directed to a "method for upgrading one of a plurality of

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computer programs stored on a server computer in a distributed computing environment" that involves "instructing a router to stop routing requests for said computer program to said server computer while permitting said router to continue routing requests for other computer programs to said server computer." As set forth above, this is neither taught nor suggested by Jiang.

Claim 17 further recites that the computer program is an executable computer program, thus underscoring certain distinctions between an application server and the data mover disclosed in Jiang. Jiang neither teaches nor suggests any involvement of an executable computer program.

Claim 17 further recites "waiting until said server computer is no longer supporting a current client request for said computer program." This is neither taught nor suggested by Jiang.

Further still, claim 17 recites "after completion of upgrading of said computer program, instructing said router to begin routing requests for said computer program to said server computer." This also is neither taught nor suggested by Jiang.

Claims 18-20 depend from claim 17 and are likewise patentable. Claim 18 further recites that the signal is sent to a packet-switching router, thereby further distinguishing over the cited art, as discussed above with reference to claims 3, 7 and 21.

For at least these reasons, reconsideration and withdrawal of the rejection of claims 17-20 are requested respectfully.

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CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe claims 1-14 and 17-22 to be patentable and the application in condition for allowance. Applicants respectfully request issuance of a Notice of Allowance. If any issues remain, the undersigned requests a telephone interview prior to the issuance of an action.

Respectfully submitted,

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